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U.S. DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

TECHNICAL NOTES

Feb. 17, 1966

PRECISE SWATH WIDTH AND RATE DISSEMINATION by AERIAL APPLICATION

A "Granular Disseminating Configuration" machine just developed by the Evergreen Helicopter Incorporated, McMinnville, Oregon now provides a tool to accurately aerial broadcast pelleted material and most seeds.

ADAPTABILITY

The swath width can be varied from 12 feet to 120 feet. Rate of application can be varied from 5 pounds to 1000 pounds per acre. Both the swath width and rate per acre can be changed within minutes.

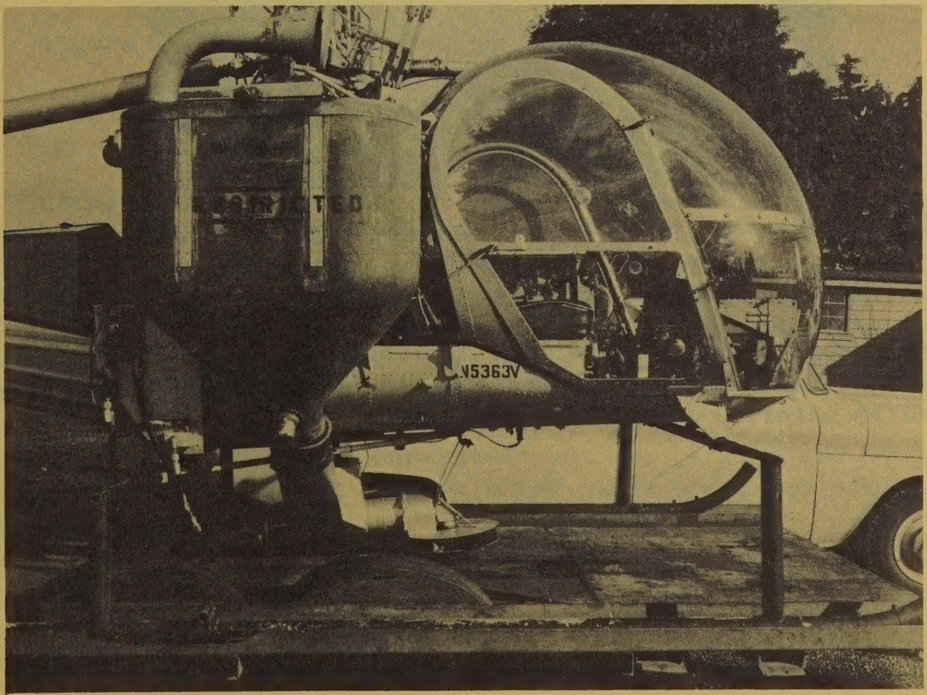

Figure 1 - Side view, hydraulic controls, hopper, worm drive (enclosed) and blade disseminator

Due to the excellent visibility from a helicopter and with part of the material being disseminated (180° arc) in front of the helicopter, extreme accuracy on turn on and off is maintained. A trial and error period is not needed to figure the rate of application due to the precise calibration. The calibration is not affected by head pressure and affords precise configuration. Loss of flying time due to mechanical failure is negligible.

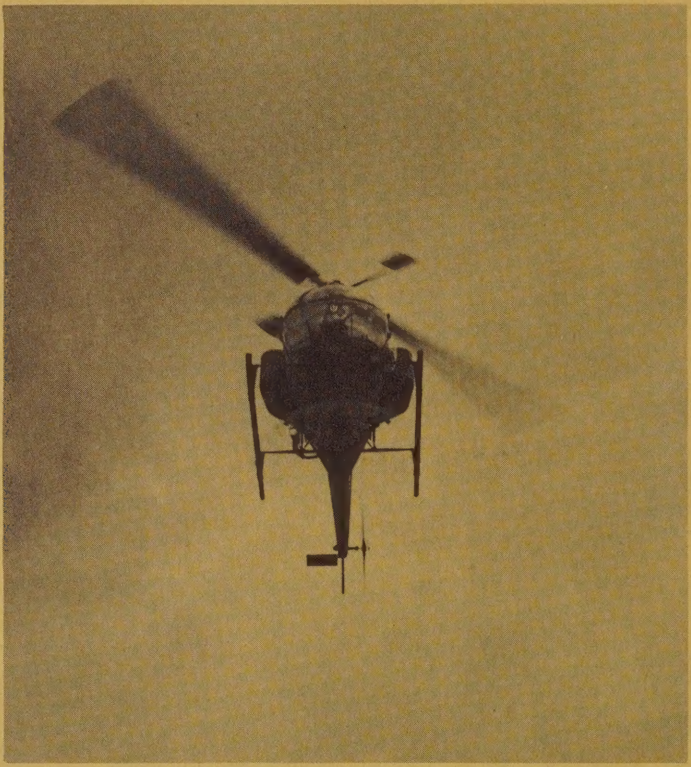

Figure 2 - Copter broadcasting 200 pounds urea per acre - 30 foot swath

Both seed and pelleted material may be broadcast at the same time but, due to weight variance, an even rate would be difficult unless properly separated by material such as rice hulls.

Figure 3 shows the extremely even distribution.

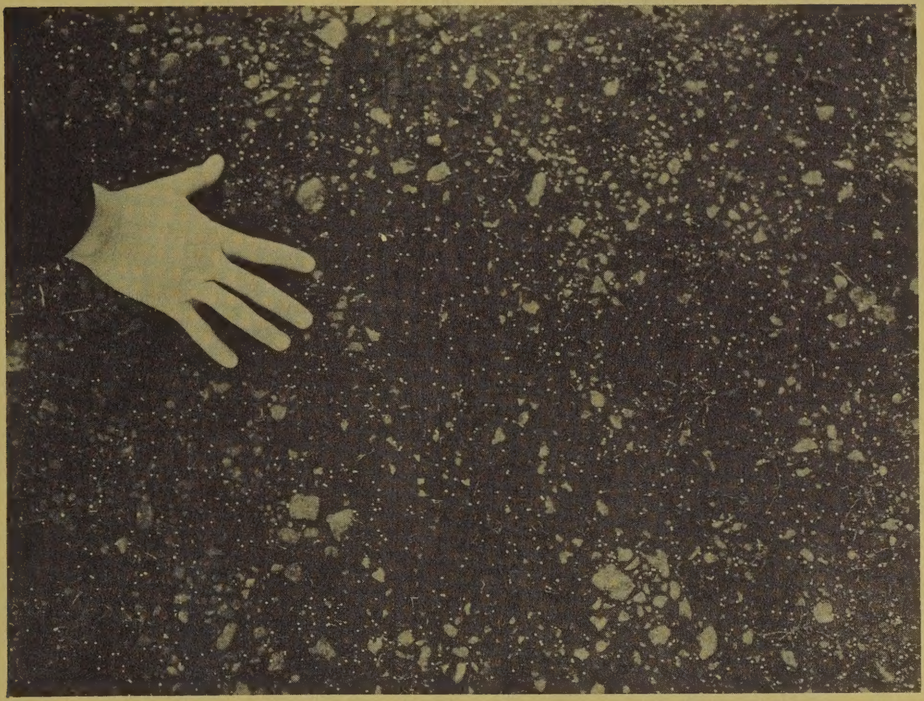

Figure 3 - Pattern, 200 pounds urea per acre,
60 foot swath

The disseminator's capability of confining distribution within very accurate limits opens up a number of interesting possibilities for its use such as application of seed, fertilizers and chemicals within the boundaries of rights-of-way, fence lines, access roads, fuel breaks, study plots, etc. On the average, minimum flying height at this time is twenty feet for good coverage. Maximum height is unlimited.

The machine is available commercially and can be obtained by any contractor, but it is not adaptable for fixed-wing aircraft at this time.

LIMITATIONS

Maximum load limit for a Hiller 12E helicopter is 1,000 pounds at sea level. Maximum loads vary with temperature and elevation; normally 420 lbs. at 11,000 ft., 600 lbs. at 6,000 ft. and 800 lbs. at 4,000 ft.

Cost will vary with the rate and swath width per acre and acreage size of project. The wider the swath and the larger the acreage, the better the possibility of an economical price; also a wide swath alleviates the chance of error in both excessive overlap and skips. Estimated cost per acre will vary from 65¢ to $1.20.

Low volume rates cannot be dispensed accurately but they can be applied by conventional broadcast methods.

If sufficient interest is shown by the field offices, contract specifications will be developed.

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